

On the Road

ON THE RELIEF ROUTE-S.R.1

Route 7 to U.S. Route 113

Issue 11

Fall 1992

RELIEF ROUTE BUDGET

DelDOT balances project changes with cost-saving measures

The overall cost of the US Route 13 Relief Route has stayed close to original project estimates, increasing only slightly due to the addition of measures which improve the overall project. To help balance cost increases, the Delaware Department of Transportation (DelDOT) has been able to keep the budget in check through creative financing and value engineering.

DelDOT now estimates that the highway—the largest public-works project in the history of the state—will cost \$780 million once completed soon after the turn of the century. Although this figure appears high compared to the \$503 million estimate made in 1987 (in 1986 dollars), it is actually only seven percent higher when the 1987 estimate is escalated for inflation to the projected completion date of the Relief Route.

For this seven percent, DelDOT has been able to accommodate many changes which result in a safer, more efficient and environmentally sensitive highway project. For example, since the original engineering, the right-of-way was widened from 250 to 300 feet to improve the design and safety of the highway. This widening requires DelDOT to

purchase additional property and to pay to relocate originally unaccounted-for residents and businesses. Another example is DelDOT's prudent decision to use paving designed to last 40 years rather than the originally specified, less-expensive, 20-year paving.

Several million dollars were added to project costs due to more-stringent environmental and other regulations which were either unanticipated at the project outset or introduced later in the process. These include, as examples, wetlands mitigation at a higher replacement ratio of 2:1 rather than 1:1 to make up for disturbances to Delaware's critical wetlands by the project, additional archeological studies at sites found during the planning and engineering of the project, and longer bridge lengths to meet environmental requirements. Plus, the extra time spent developing design options to respond to public comments added to project costs.

DelDOT added additional ramps to the design of the new C&D Canal bridge to permit toll-free use of the bridge by motorists via US Route 13. This cost add-on occurred as a stipulation for the state to receive federal money toward construction of the bridge. In order to account for recent federal Clean Air legislation (which will ultimately affect the current pattern of personal-automobile use), DelDOT will add park-and-ride lots convenient to the Relief Route. And, a recently reconstructed rest area and new weigh station also became part of the project.

Significant cost savings have resulted in the past few months due to a slow regional economy and greater competition among contractors. Contractors bid lower than DelDOT estimated on several recently advertised contracts. These savings—coupled with the fact that the federal government is now paying a greater share of the overall Relief Route than DelDOT first predicted (see "One Perspective" on page 3)—are good news for Delawareans. As the first major section of the project—the Smyrna/Dover bypass—opens later in 1993, taxpayers can be assured of the state's keen ability to balance unexpected expenses and cost-adding improvements with significant savings. ■



Delaware Department of
Transportation

Mark A. McNulty
Acting Secretary

On the Road is published periodically by the Delaware Department of Transportation and is the official newsletter of SR 1, the US Route 13 Relief Route.

ATTENTION DOVER-AREA RESIDENTS AND BUSINESSES

Notices of the Design Public Hearing for the Puncheon Run segment will appear in early 1993 in local newspapers and will be sent to people on the SR 1 mailing list. *On the Road* recipients are requested to submit names and addresses of friends and neighbors interested in joining the mailing list to:

On the Road
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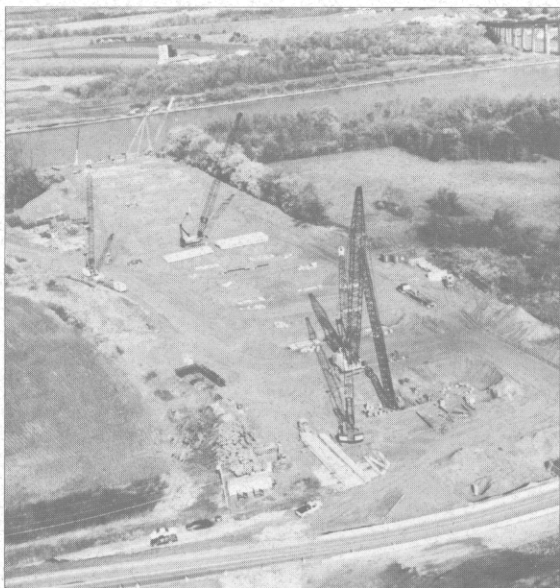
The US Route 13 Relief Route is the largest public-works project ever undertaken by the State of Delaware.

Mile STONES



Terry Fulmer/DelDOT

This Dover-area mitigation site will be planted with wetlands vegetation in 1995.



Tim O'Brien/DelDOT

Construction at the C&D Canal is proceeding as scheduled.

• **C&D CANAL BRIDGE APPROACHES:** *Bids lower than low*

DelDOT recently awarded the construction contract for the section of the Relief Route that includes the approaches to the new C&D Canal Bridge to the Hardaway Company, the Maryland office of a Georgia-based firm, which bid \$39.3 million. DelDOT had expected the bids to be closer to their \$49.2-million forecast, but of the nine bids received, none topped \$44.2 million. DelDOT credits the low bids to the sluggish economy which has made contractors more willing to reduce their profits in order to win projects. This latest section to be awarded begins at the Delaware Route 1/US Route 13 interchange at Tybout's Corner and ends at US Route 13 south of the C&D Canal. Even though this contract does not include the new bridge it does include both the north and south bridge approaches.

• **WETLANDS CREATION:** *Encouraging diverse wildlife habitat*

In keeping with federal policy which requires that there be "no net loss of wetlands" in construction projects, wetlands which are destroyed as part of the Relief Route must be replaced. This replacement is referred to as wetlands mitigation. The majority of the project's first-phase wetlands mitigation involves the creation of new wetlands out of several sites in Smyrna and Dover.

DelDOT developed planting plans for the mitigation sites in concert with state and federal wetlands regulatory agencies. Planting is not anticipated to take place until the Spring of 1995 because the saplings will be grown from seed over the next two and one-half years. With the exception of one site which will contain hardwood trees, each Phase I mitigation site will have a mixture of hardwood and coniferous trees. Some sites will also feature special plant species such as Bald Cypress trees. Each site will also encourage special and diverse wildlife habitats, such as open water for herons and shallow pits for salamander breeding.

• **SMYRNA BYPASS:** *A mile a day*

In addition to the completed Road 12 bridge, which opened to traffic in September, several other structures are now complete with only finishing touches left to be done. The south-of-Smyrna interchange structure is built with all final grading and soil stabilization work finished. And the structure which carries SR 1 over Mill Creek has recently been completed. Final construction activities on this bridge included general finishing work such as removing temporary erosion-control devices and proceeding with the final grading of side slopes and drainage ditches. Concrete paving of the roadway or "mainline" for the Smyrna bypass and the section between Smyrna and Dover was completed faster than expected. On some days workers were able to pour in excess of one mile of concrete paving each day, quite significant considering the fewer number of daylight hours in autumn.

• **C&D CANAL BRIDGE:** *Ahead of schedule*

Work on the new bridge is steadily moving forward with progress most evident in the construction of the north approach embankment—finished seven months in advance of its scheduled completion date! Also complete is the temporary detour of Road 412 and the lane-shifting of southbound US Route 13. Concrete-casting work is moving forward, producing a total of 424 precast piles, approximately 47 percent of the total 900 piles needed for the project. Contractors have completed 101 box pier segments and 13 pier caps, 25 percent of the total 464 segments required. Unlike the precast piles which are individually driven into place, the box pier segments and caps are stacked one on top of another at the project site. ■

1ne PERSPECTIVE

"One Perspective" is a regular feature of On the Road. The interviews presented here are intended to provide readers with a personal, behind-the-scenes view of the planning, design and construction activities associated with SR 1, the US Route 13 Relief Route.

For this Fall 1992 issue, "One Perspective" focuses on the Federal Highway Administration (FHWA) and its involvement with DelDOT on the SR 1 project. John Gilbert, FHWA division administrator, and Carl Gottschall, field operations engineer, both work in FHWA's Delaware Division in Dover. The Relief Route project was selected in 1988 to become one of only a handful of federally funded, FHWA demonstration toll projects in the nation.



John Gilbert (left) and Carl Gottschall standing in front of FHWA's Delaware Division office in Dover.

OTR. *How did the Federal Highway Administration (FHWA) become involved in the Relief Route project?*

JG. FHWA's financial participation in the project began when the US Route 13 Relief Route was selected as a demonstration project. DelDOT requested participation in this program which was established in 1987 to evaluate the use of federal dollars for state highway projects in which drivers are charged tolls to use the roadway.

OTR. *What is FHWA's role in the project?*

CG. Basically, FHWA provides funds to state departments of transportation (DOTs) for the planning, design and construction of various projects. States establish project priorities for which they use federal assistance. In accepting this funding, the state DOTs agree to comply with all applicable federal regulations, including those that protect wetlands. FHWA provides oversight and technical assistance to the state DOTs in the project-development process.

OTR. *What are the advantages to DelDOT of having FHWA involved in the project, outside of the obvious advantage of being a funding source?*

CG. FHWA, like other federal agencies, has a national perspective that can be extremely useful to a state or regional organization such as DelDOT. Not only do we provide oversight on the project,

we also have access to a wealth of national expertise from which the state can draw. This has proven to be a very valuable resource.

OTR. *In what ways has FHWA provided technical expertise?*

JG. One key area where we believe FHWA was particularly useful to DelDOT was in the development of the pavement design for the Smyrna to Dover section of the Relief Route which is currently under construction. Experts within FHWA participated in the design process and, by incorporating the latest paving technology, developed an asphalt-treated base for the concrete pavement. The base is permeable. It allows water which penetrates the surface to be quickly drained from the road, thereby significantly extending the life of the pavement.

CG. FHWA was also involved in the development of the steel alternative for the new bridge over the C&D Canal. The participation of FHWA bridge engineers led to a design that reduced the amount of steel in the bridge, thus creating an alternative that was cost competitive with the concrete alternative. By increasing competitiveness between the two alternatives, the concrete design was fine-tuned even more and was ultimately selected as the best alternative to cross the canal.

DID YOU KNOW?

- The interstate highway system, as originally planned in the 1950s, is now 99.6 percent complete and encompasses approximately 43,000 miles of roadway.
- The Relief Route is one of the fastest-progressing FHWA demonstration projects across the country.
- Initially, FHWA agreed to provide federal funds to pay up to 35 percent of SR 1 project costs. Due in part to the project's success, the federal government has now agreed to pay up to 50 percent of the costs of work since December 1991.

("One Perspective" continues on page 4)

("One Perspective" continued from page 3)

OTR. From FHWA's standpoint has the use of federal funds in the project been successful?

JG. DelDOT has done a remarkable job in effectively using both federal and their own state-generated funds. Compared to the other demonstration projects nationwide, the Relief Route is very successful. It is moving forward as a result of good management and good engineering. Good management has kept costs down while negotiating ever-changing federal regulations—particularly those governing wetlands—and by completely involving the public and utilizing public input. DelDOT makes every effort possible to use public suggestions in arriving at engineering solutions. This commitment to public input was clearly demonstrated in arriving at the final alignment for the Puncheon Run section last August.

OTR. How has the success of the demonstration projects affected transportation policy in the nation?

JG. The flexibility in use of federal funds by state DOTs was a significant element of the demonstration projects. The success of this approach led to a similar feature being included in the recently passed Intermodal Surface Transportation Efficiency Act (ISTEA). This legislation has received much well-deserved attention due to its emphasis on intermodalism: providing coordinated linkage between different means of transportation such as automobiles, transit, airports, railroads, and so forth, to effectively and efficiently accommodate travel demand. The Relief Route—and projects like it—helped pave the way for the flexibility inherent in ISTEA. ■

TO OUR READERS:

The State of Delaware and the consultant team are committed to continuing the citizen-input process during the design and construction phases of the project. We invite you to write us with questions or comments regarding *On the Road* or to arrange for a presentation to bring your group up to date on the Relief Route. To receive your free copy of *On the Road* as well as other mailings related to the project, please write or call us with your request.

FOR MORE INFORMATION

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